UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,164	01/28/2004	Furquan A. Ansari	Ansari 1-2	3389

46850 7590 10/20/2008

MENDELSOHN & ASSOCIATES, P.C.
1500 JOHN F. KENNEDY BLVD., SUITE 405
PHILADELPHIA, PA 19102

EXAMINER	
BARQADLE, YASIN M	

ART UNIT	PAPER NUMBER
2456	

MAIL DATE	DELIVERY MODE
10/20/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/766,164
Filing Date: January 28, 2004
Appellant(s): ANSARI ET AL.

Kevin M. Drucker
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 07/28/2008 appealing from the Office action mailed February 6, 2008

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

"TCP-R: TCP Mobility Support for Continous operation", NETWORK

PROTOCOLS,	Funato et al	1997
2004/0151158	Gannage et al	08-t 2004
6,072,942	Stockwell et at.	06- 2000
2004/0202160	Westphal	10-2004

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1-5, 8-14, and 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funato et al. ("TCP-R: TCP Mobility Support for Continous operation", NETWORK PROTOCOLS, 1997) in view of Gannage et al US Pub. 20040151158, hereinafter “Gannage”.

For claim 1 and 21:

A method of migrating from a current endpoint address to a new

endpoint address by a migrator (See Page 232, Fig. 2, MH) during a session between the migrator and a non-migrator (See Page 232, FIG. 2, CH) in a packet-based communication system, the method comprising the steps of:

(a) changing, in the migrator, the current endpoint address to the new endpoint address (mobile host changes its end point address; see page 233, first column, second Para, last line, "... the MH also revises its own pair of addresses");

(b) suspending transmission to the non-migrator of packets with the new endpoint address (Disconnect with CH and maintaining the TCP/IP connection means suspension of connection, See Figure 2 (shown above), disconnect between CH and MH under the dotted line);

(c) informing the non-migrator of the change to the new endpoint address (redirect message is notifying change of address, see page 232, second column, second Para from bottom, last line, "After the MH obtains a new IP address, the MH sends a redirect message to its correspondent host(CH).") ;

(d) resuming transmission to the non-migrator of packets with the new endpoint address (Resumed to communicate with revise TCP connection is resumption of transmission; see page 233,

first column, third Para from top, "They [MH and CH] resume to communicate with the revised TCP connection").

Although Funato shows substantial features of the claimed invention, Funato does not explicitly show using a channel separate from the channel of the session between migrator and the non-migrator to inform changes. Nonetheless, this feature is well known in the art and would have been an obvious modification of the system disclosed by Funato, as evidenced by Gannage USPN. (20040151158).

In analogous art, Gannage disclose "Notifications are out-of-band signals in that they occupy a totally separate channel from the main message channel. Examples of this are notifications that are established over TCP/IP sockets whereas the messages themselves are sent as HTTP traffic." (¶ 0023).

Giving the teaching of Gannage, a person of ordinary skill in the art would have readily recognized the desirability and the advantage of modifying Funato by employing the separate channel notification system of Gannage to prevent overloading the existing session channel between the migrator and non-migrator with notification information. By send notification messages in a separate out of band channel will result a faster data deliver and reduction of transport data delays.

For claim 2:

The invention of claim 1 (see supra for claim 1 discussion), wherein step (a) comprises the steps of logically changing to the new endpoint address and updating a kernel structure of the migrator (For TCP-R to work correctly, both migratory and non-migrator end point address needed to be updated. See page 235, first column, first Para, lines 2 , "... it changes dstaddr in its 4-tupel [another implied tuple representing tcp, total five tuples], ... these operations are needed by both ends [i.e. both migratory and non-migrator] of the connection.")

The invention of claim 2 (See supra for discussion claim 2), wherein the migrator changes to the new current address by changing from a current 5-tuple comprising the current endpoint address to a new 5-tuple.comprising the new endpoint address (The TCP address is identified by five tuples, Protocol, TCP (implied in the implementation), Source address, source port, destination address (dstaddr), and destination port (dstport), see page 234, second column, last para, lines 2-3, "TCP connections are identified by a 4-tuple of {srcaddr, srcport, dstaddr, dstport}"), and updating the kernel structure of the migrator comprises modifying a socket with the current 5-tuple to reflect the new 5- tuple, the socket being associated with the session (Changing the destination address and rehashing hash entry is updating the kernel structure and if

For claim 4:

The invention of claim 2 (see supra claim 2 discussion), wherein step (a) comprises the steps of registering with the non-migrator (revising pair of addresses is the registration of address, See page 233, second Para from top, lines 2-3 "CH revises the pair of addresses of the existing TCP connection.")

before initiating the change to the new endpoint address (sending the redirect message is initiating change to the new end point address, See page 232, second Para from bottom, last tow lines, "... MH sends a redirect message to its correspondent host (CH)".

For claim 5:

The invention of claim 1 (see supra for claim 1 discussion), wherein step (b) comprises the steps of dropping packets from the non-

migrator received at the network layer and suspending transmission of packets to the non-migrator at the transport layer (When tcp connection between MH and CH are disconnected, the network layer will drop any packets addressed to the CH; while maintaining the tcp/ip connection, if tcp connection is disconnected and resumed between CH and MH, it is equivalent to suspending, see page 232, Figure 2, for disconnect MH and CH and see page 233, column 1, Para 3 from top, first line, "They resume to communicate with revised TCP connection).

For claim 8:

The invention of claim 1 (See supra for claim 1 discussion), wherein step (c) comprises the steps of sending a control message to the non-migrator informing the non-migrator of the change to the new endpoint address (sending redirect message is notifying change of end point address; see page 232, second column, second Para from bottom, last line, "MHO sends a redirect message to its correspondent host (CH).") and receiving a confirmation from the non-migrator that the non-migrator has changed to the new endpoint address (Receiving AT_REQ in rd_snt state by migrator is equivalent to receiving confirmation that non-migrator has changed the end point address; See Page 233, section 4.3 details of RD-SNT, "After RD-REQ is sent to the

mobile host side, the mobile host [migratory] enters the RD_SENT state When the mobile host [migrator] receives the authentication segment (AT_REQ) in this state, it sends a calculated identifier to the peer. Then it [migrator] to the established state" and RD_RCVD, "When the correspondent host [non-migrator] RD_REQ, it [non-migrator] enters the RD RCVD state. ... it [non-migrator] just sends an AT REQ segment and enters ESTAB state.";).

The invention of claim 1 (see supra for claim 1 discussion), wherein, for steps (a) through (d), the session conforms to a transmission control protocol and an Interact protocol (TCP redirection is an extention to TCP/IP and therefore conforms to the TCP/IP; See abstract, first line, "The TCP-R (TCP redirection) is an extension of the TCP ...").

For claim 10:

The invention of claim 1 (see supra for claim 1 discussion), wherein the method is implemented in a processor of a node in a packet network (MH is a portable computer implementing claim 1 and further described as frequently changing IP address, therefore, MH is processor implemented in a single node; see Page 229, section 1, introduction, first Para, lines 6-8, "so they [portable computers] may

change IP addresses when the ..").

For claim 11:

The invention of claim 10 (see supra for claim 10 discussion), wherein, for step (d), the session comprises packets exchanged between the migrator and non-migrator in at least one of a wired communication network (10BaseT Ethernet is a wired communication; see Page 235, second column, Section 5.5, first Para, line 7, "10BaseT Ethernet is used as the data link layer.") and a . wireless communication network (When the machines are moved between the cells, they are in wireless communication network, See page 229, first column, section 1 introduction, lines 6-8, "so they may frequently change IP addresses when the machines are moved between cells.").

For claim 12, 21 and 22:

A. method of migrating from a current endpoint address to a new endpoint address by a non-migrator (See Page 232, Figure 2, CH is non-migrator) during a session between the non-migrator and a migrator (See Page 232, Figure 2, MH is migrator) in a packet-based communication network (CP implies packet based network, see abstract, first line, "The TCP-R (TCP Redirection) is an extension of TCP ..."), the method comprising the steps of:

(a) receiving a control message indicating the migrator's change to the new endpoint address (See MH sending the redirect message is control message, see page 232, second column, second Para, from the bottom, last line "... MH sends a redirect message to its correspondent host(CH).") ;

(b) changing, in the non-migrator, the current endpoint address to the new endpoint address (see page 233, first column, second Para, line 2, "... CH revises the pair of addresses ...");

(c) acknowledging, to the migrator, the non-migrator's change to the new endpoint address (Receiving AT_REQ in rd_snt state by migrator is equivalent to receiving acknowledgment that non-migrator has changed the end point address; See Page 233, section 4.3 details of RD-S NT, "After RD-REQ is sent to the

mobile host side, the mobile host [migratory] enters the RD_SENT state When the mobile host [migrator] receives the authentication segment (AT_REQ) in this state, it sends a calculated identifier to the peer. Then it [migrator] to the established state" and RD_RCVD, "When the correspondent host [non-migrator] RD_REQ, it [non-migrator] enters the RD_RCVD state. ... it [non-migrator] just sends an AT REQ segment and enters ESTAB state.";) ; and

(d) exchanging, with the migrator, packets of the session with the

new endpoint address (Resuming communication, is exchange of packets, See page 233, first column, third Para, first line, "They [MH and CH] resume to communicate with the revised TCP connection.").

Although Funato shows substantial features of the claimed invention, Funato does not explicitly show using a channel separate from the channel of the session between migrator and the non-migrator to inform changes.

Nonetheless, this feature is well known in the art and would have been an obvious modification of the system disclosed by Funato, as evidenced by Gannage USPN. (20040151158).

In analogous art, Gannage disclose “Notifications are out-of-band signals in that they occupy a totally separate channel from the main message channel. Examples of this are notifications that are established over TCP/IP sockets whereas the messages themselves are sent as HTTP traffic.” (¶ 0023).

Giving the teaching of Gannage, a person of ordinary skill in the art would have readily recognized the desirability and the advantage of modifying Funato by employing the separate channel notification system of Gannage to prevent overloading the existing session channel between the migrator and non-migrator with notification information. By send notification messages in a separate out of band channel will result a faster data deliver and reduction of transport data delays.

For claim 13:

The invention of claim 12 (see supra for claim 12 discussion), wherein step (b) comprises the steps of logically changing to the new endpoint address and updating a kernel structure of the non-migratory (For TCP-R to work correctly, both migratory and non-migrator end point address needed to be updated. See page 235, first column, first Para, lines 2 , "... it changes dstaddr in its 4-tupel [another implied tuple representing tcp, total five tuples], ... these operations are needed by both ends [i.e. both migratory and non-migrator] of the connection.").

The invention of claim 13 (see supra claim 13 for discussion), wherein the non-migrator changes to the new current address by changing from a current 5- tuple comprising the current endpoint address to anew 5-tuple comprising the new endpoint address (The TCP address is identified by five tuples, Protocol, TCP (implied in the implementation), Source address, source port, destination address (dstaddr), and destination port (dstport), see page 234, second column, last para, lines 2-3, "TCP connections are identified by a 4-tuple of {srcaddr, srcport, dstaddr, dstport}") and updating the kernel structure of the non-migrator comprises modifying a socket with the current 5-tuple to reflect the new 5-tuple, the socket being associated with the session

(Changing the destination address and rehashing hash entry is updating the kernel structure and if socket address is not updated, TCP-R will not function, see Page 235, first Para, lines , "When a redirection segment arrives to a host which supports TCP-R, it changes destaddr in its 4-tuple and rehashes the hash entry related to its correspondent host. To achieve the redirect operation correctly, these operations are needed by both ends of the connection.").

For claim 15:

The invention of claim 13 (see supra for claim 13 discussion), wherein step (a) comprises the steps of:

registering the migrator before receiving the control message (to detect change in IP address by an external daemon requires registration of change of

address with daemon; see page 231, second column, first Para from bottom, first line, "... TCP-R assumes that each mobile host can detect the change of its IP address some how. ... *external daemons* may be required for this assumption".

For claim 16:

The invention of claim 12, wherein step (b) includes the step of

continuing to receive packets from the migrator during the change (Since Disconnect while maintaining TCP connection is equivalent to suspension, and before resuming the connection the packets of RD-REQ, AT-REQ, and AT_REP are exchanged between CP and MH, packets are exchanged between CH and MH, See page 232, Figure 2 in conjunction with Page 233, Section 4.3).

For claim 17:

The invention of claim 12, wherein, for step (d), the session conforms to a transmission control protocol and an Internet protocol (TCP extensions conform to TCP/IP, see Page 229, Abstract, first line, "The TCP-R (TCP Redirection) is an extension of TCP ...").

For claim 18:

The invention of claim 12, wherein the method is implemented in a

5.5, first Para, lines 5-7, "... IBM PC/AT Compatibles (Pentium 166 MHz, Free BSD) as CH ...").

For claim 19:

The invention of claim 18, wherein, for step (d), the session comprises packets exchanged between the migrator and non-migrator in at least one of a wired communication network (10BaseT Ethernet is a

wired communication; see Page 235, second column, Section 5.5, first Para, line 7, "10BaseT Ethernet is used as the data link layer.") and wireless communication network (When the machines are moved between the, cells, they are in wireless communication network, See page 229, first column, section 1 introduction, lines 6-8, "so they may frequently change IP addresses when the machines are moved between cells.").

For claim 20:

A network comprising:

a migrator adapted to migrate from a current endpoint address to a new endpoint address during a session; and

a non-migrator adapted to migrate from a current endpoint address to a new endpoint address during a session, wherein the migrator is adapted to:

i) change, in the migrator, the current endpoint address to the new

endpoint address (mobile host (migrator) changes its end point address,

see page 233, first column, second Para, last line, "... the MH also revises its own pair of addresses"),

ii) suspend transmission to the non-migrator of packets

with the new endpoint address (Disconnect with CH and maintaining the TCP/IP connection means suspension of connection, See Figure 2 (shown above), disconnect between CH and MH before the dotted line),

(iii) inform the non-migrator of the change to the new endpoint address (redirect message is notifying change of address, see page 232, second column, second Para from bottom, last line, "After the MH obtains a new IP address, the MH sends a redirect message to its correspondent host(CH).") , and

iv) resume transmission to the non-migrator of packets with the new endpoint address(Resumed to communicate with revise TCP connection is resumption of transmission, See page 233, first column, third para from top, "They [MH and CH] resume to communicate with the revised TCP connection") , and

wherein the non-migrator is adapted to:

i) receiving a control message indicating the migrator's change to the new endpoint address (See MH sending the redirect message is control message, see page 232, second column, second Para, from the bottom, last line "... MH sends a redirect message to its correspondent host(CH).'),

ii) change, in the non-migrator, the current endpoint address

to the new endpoint address (see page 233, first column, second Para, line 2, "... CH revises the pair of addresses ..."),

(iii) acknowledge, to the migrator, the non-migrator's change to the new endpoint address (Receiving AT_REQ in rd_snt state by migrator is equivalent to receiving acknowledgment that non-migrator has changed the end point address; See Page 233, section 4.3 details of RD-SNT, "After RD-REQ is sent to the mobile host side, the mobile host [migratory] enters the RD SENT state ... When the mobile host [migrator] receives the authentication segment (AT_REQ) in this state; it sends a calculated identifier to the peer. Then it [migrator] to the established state" and RD_RCVD, "When the correspondent host [non-migrator] RD_REQ; it [non-migrator] enters the RD_RCVD state. ... it [non-migrator] just sends an AT REQ segment and enters ESTAB state.";), and

(iv) exchange with the migrator, packets of the session with the new endpoint address (Resuming communication, is exchange of packets, See page 233, first column, third Para, first line, "They [MH and CH] resume to communicate with the revised TCP connection.").

Although Funato shows substantial features of the claimed invention, Funato does not explicitly show using a channel separate

from the channel of the session between migrator and the non-migrator to inform changes.

Nonetheless, this feature is well known in the art and would have been an obvious modification of the system disclosed by Funato, as evidenced by Gannage USPN. (20040151158).

In analogous art, Gannage disclose "Notifications are out-of-band signals in that they occupy a totally separate channel from the main message channel. Examples of this are notifications that are established over TCP/IP sockets whereas the messages themselves are sent as HTTP traffic." (¶ 0023).

Giving the teaching of Gannage, a person of ordinary skill in the art would have readily recognized the desirability and the advantage of modifying Funato by employing the separate channel notification system of Gannage to prevent overloading the existing session channel between the migrator and non-migrator with notification information. By send notification messages in a separate out of band channel will result a faster data deliver and reduction of transport data delays.

(10) Response to Argument

Allowable Subject Matter

Claim 6 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In response to Appellant**'s arguments regarding claims 6 and 7 , the Examiner withdraws the rejection of claims 6 and 7 due to the allowable subject matter indicated above.**

In essence the Appellant argues:

A- "**Gannage is non-analogous art**, because Gannage is concerned with the problem of transferring voice over data channels, e.g., for telephone conferencing, while Funato is concerned with the problem of changing endpoint addresses." (Page 10 last paragraph).

B- "The Examiner alleges two different **improper motivation for combining Funato and Gannage."** (Page 11 second paragraph).

In response to point (A) regarding that "Gannage is non-analogous..", it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See In re Oetiker, 977 F.2d 1443, 24

USPQ2d 1443 (Fed. Cir. 1992). In this case, Gannage is in the field of packet based communication between end devices (mobile devices) using communication channels. See Gannage "This application allows an end user to pick up his/**her mobile terminal**, push a key and start talking to **another mobile terminal** user in real time in a walkie-talkie like manner." (Paragraph 0006). Gannage is further concerned with packet (IP network) based notification system that includes mobile end points (migrator) and non-migrator end points " The ERIMP system supports the exchange of rich messages in an Instant Messaging fashion. To accommodate client platforms that span the PC, PDA and cell phones, the ERIMP system supports peer-to-peer messaging as well as notifications based messaging. Notifications are delivered to recipients to inform them of the availability of rich messages waiting, at the ERIMP server, to be collected. Receiving clients act upon the received notification to access the ERIMP server and pick up the received message" (see Gannage paragraph 0022).

As such Gannage is an analogous art since it deals with mobile endpoints and non-migrator endpoints that communicating each other via IP network. It is also clear the Gannage's endpoints (migratory or non-migrator) use an IP network (fig. 3 and paragraphs 00320033) where IP addresses are used for the endpoints. Changing IP address for a mobile endpoints as it moves from one

location is well known it the art as disclosed by Fonata. Therefore, the Appellant's argument that Gannage is non-analogous is not persuasive.

In response to Appellant's argument arguments against the references individually ("Gannage has absolutely nothing to do with migrating from current endpoint address to a new endpoint address in a packet-based communication system", Page 11, first paragraph) , one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See In re Keller, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); In re Merck & Co., 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Gannage is relied upon to teach the missing limitation of "using a separate channel for informing changes ..." the limitation of "migrating from current endpoint address to a new endpoint address.." is taught by Fonata, as such Applicant's arguments are not persuasive.

In response to point (B) regarding "**improper motivation for combining Funato and Gannage.**" The Examiner respectfully disagrees. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and In

re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the Examiner has identified a suggestion and motivation as recited in the Final Office Action "the advantage of modifying Funato by employing the separate channel notification system of Gannage to prevent overloading the existing session channel between the migrator and non-migrator with notification information. By send notification messages in a separate out of band channel will result a faster data deliver and reduction of transport data delays (fast response time see Gannage paragraph 0023).

The Appellant states "...using a separate channel permits the non-migrator to be informed of the IP address changes..." page 11 mid of paragraph 2. In other words the separate channel is for the purpose informing an endpoint of changes (sending a notification message to an endpoint as Gannage teaches).

In page 8, lines 21-23 of the Appellant's specification describes "separate channel" as an out-of-band channel, "STEM daemons 104 and 105 might be in communication through an out-of-band channel (channel separate from the TCP session channel), shown as a user datagram protocol (UDP) session passing through Internet 103." Gannage also teaches [0023] "Notifications are out-of-band signals in that they occupy a totally separate channel from the main message channel. Examples of this are notifications that are established over TCP/IP sockets whereas the messages themselves are sent as HTTP traffic.

The notification channel is intended to be a signaling channel and has a very fast response time. Accordingly the data payloads over the notification channel are, by definition, kept to very small values." (Paragraph 0023). Therefore, Gannage is combined with Fonata to teach the limitation of "using a separate channel (out-of-band channel) for notification purpose rather than" the session between migrator and the non-migrator. In this way sending notification messages in a separate out of band channel will result a faster data deliver and reduction of transport data delays (fast response time). As such the Examiner believes the motivation for combining Funato and Gannage is proper.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

10/10//2008

/Yasin M Barqadle/

Primary Examiner, Art Unit 2456

Conferees:

/Bunjob Jaroenchonwanit/

Supervisory Patent Examiner, Art Unit 2456

/Jeffrey Pwu/

Supervisory Patent Examiner, Art Unit 2446